



Research Focus

Profile: Institut Pasteur, Paris, France

The Institut Pasteur may not exactly be reinventing itself, but it obviously has had to change its *modus vivendi* radically in the 128 years since it was inaugurated. Not that founder Louis Pasteur would probably be displeased with the direction it is taking. "Adopt a critical mind", he said in his inaugural speech on Nov 14, 1888. "By itself, it can neither encourage ideas nor stimulate anything great. But without it, everything is useless. It always has the last word."

Critics today say the institute has lost much of its international aura and special Pasteur spirit in an era of large anonymous research agencies. Their President Christian Bréchet admits that the aura has faded somewhat over time, but insists that the spirit lives on and that the 4 year strategic plan adopted a year after he took up his post in October, 2013, should do much to restore the institute's lustre. "I recognise we need to be more attractive to scientists around the world, and take greater advantage of what distinguishes us from other research organisations", he said.

The institute still focuses on seeking cures for emerging viruses such as Ebola and Zika and other infectious diseases, and has maintained its teaching and training backbone. But it has also spread its wings to become an important player in public health surveillance for WHO through its 33 branches in 26 countries across five continents, added Bréchet, who was chairman and CEO of the French National Institute of Health and Medical Research (INSERM) from 2001 to 2007 and worked on his PhD in biochemistry at the Institut Pasteur in the 1980s. "We do not deliver PhDs, but have 500 science students at the Institut Pasteur Teaching Centre at any one time taking courses we run in collaboration with universities and other agencies."

The private non-profit institute, which has produced ten Nobel prize

winners, was initially funded entirely by private donations, and now has to find new sources of money. Only about 20% comes from public subsidies (compared with 40% in the 1980s), whereas 50% comes from research contracts and royalties, and about 30% from donations and legacies. This year, legacies already total €55 million, against an annual average of €35–40 million. Fundraising techniques too have had to adapt to the times. In the past, philanthropic donors gave money unconditionally, whereas now they will ask for a business plan, noted Bréchet. "They want to be part of the action", he said. "The whole process has become much more professional."

A major goal of the current strategy up until 2018, a year after Bréchet's 4 year term ends, is to improve scientists' pay and career prospects for both newcomers and incumbents. He tried to do the same at INSERM, but says he has been able to progress faster this time because of the flexibility inherent in the institute's statutes. The result is that 13 junior and 12 mid-career or senior scientists have been recruited in 2 years, which "is no mean feat", said Bréchet.

Another pillar of the strategy is a multidisciplinary approach through the 11 research departments and the four transversal centres created in 2014 for translational science; innovation and technological research; global health research and education; and bioinformatics, biostatistics, and integrative biology. The latest hub, announced in October, 2015, is The Pasteur Global Health Genomics Center, which will bring together about 80 researchers when it is working at full speed.

Industrial partnerships and technology transfers are not new to the institute, but they have gathered momentum, and have led to the creation of 24 biotech firms in 15 years, of which four are now listed on the

French stock exchange and thriving. The institute is now concentrating on forming strategic industrial partnerships in Asia, particularly China, and the USA, where "everyone recognises the Pasteur name, but only a few people know exactly what the institute does", Bréchet said. In the USA, it will recruit technology transfer representatives, starting with a modest one or two people, and hopes to create joint research units there similar to the ones created in Tokyo and Kyoto, which will be inaugurated this year.

The international emphasis also encompasses young researchers, fundraising activities, and biobanking. Junior scientists all spend at least 3 months abroad during their first 2 years at the institute headquarters in Paris and soon at the other branches around the world. The Pasteur Foundations in the USA, Hong Kong, and Switzerland are being expanded before other foundations are opened in Europe, and biological samples are increasingly held in biobanks for analysis on-site rather than being sent round the world for processing.

In Africa, the institute is setting up a major programme for training and education in collaboration with the African Academy of Science "in a first attempt to merge English and French-speaking Africa in medical research", Bréchet said.

Denis Duboule, a genetics professor at Geneva University and the Ecole Polytechnique Fédérale de Lausanne, Switzerland, commented: "The Pasteur Institute is one of the rare life science research centres in France that can still attract young scientists from abroad."

"This is extremely important as research conditions in France are so difficult these days that many agencies have problems attracting young talent", said Duboule, who was a member of the institute's scientific committee from 1998 to 2001.

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